

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
LIBRIZZI

Serial No. **NOT YET ASSIGNED**

Filing Date: **HEREWITH**

For: **A PWM CONTROL CIRCUIT FOR
THE POST-ADJUSTMENT OF
MULTI-OUTPUT SWITCHING
POWER SUPPLIES**

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PRELIMINARY AMENDMENT

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to the calculation of fees and examination of the present application, please enter the amendments and remarks set out below.

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Amendments to the Drawings:

Attached are six (6) replacement drawing sheets. The changes made to the drawings are explained in the remarks section below.

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In the Specification:

Please replace the paragraph beginning at page 5, line 25, with the following rewritten paragraphs:

--These and other objects, features, and advantages are provided by a control circuit for a PWM regulator circuit. The PWM regulator circuit may receive a square wave signal having a duty cycle and provide a regulated direct current (DC) signal at an output thereof. The PWM regulator circuit may include a switching device for modulating the duty cycle of the square wave signal. The control circuit may include a detector for detecting trailing edges of the square wave signal and providing a reset signal based thereon. Also, a ramp signal generator may be connected to the detector for generating a ramp signal based upon leading edges of the square wave signal, and for resetting the ramp signal based upon the reset signal.

Additionally, the control circuit may also include a first comparator connected to the output of the PWM regulator circuit for comparing the regulated DC signal with a reference signal and providing an error signal based thereon. A second comparator may also be included for comparing the ramp signal with the error signal and providing a PWM signal based thereon. Moreover, the control circuit may further include a driver for driving the switching device of the PWM regulator circuit. In particular, the driver may receive the PWM signal and provide a driving signal for driving the switching device based thereon to control a conduction interval thereof. The

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driving signal may have a duty cycle less than or equal to the duty cycle of the square wave signal, and it may also have trailing edges coinciding with the trailing edges of the square wave signal.

More particularly, the first and second comparators may include error amplifiers. Further, the second comparator may provide the PWM signal when the ramp signal is greater than the error signal. By way of example, the driver may include a bistable circuit having a first input for receiving the PWM signal and a second input for receiving the reset pulse. In addition, the control circuit may further include a delay element connected to the second input of the bistable circuit for delaying the reset signal. In particular, the bistable circuit may be a set-reset (S-R) flip-flop, where the first input of the S-R flip-flop is a set input, and the second input of the S-R flip-flop is a reset input.--